Título: Nanoparticle research and the chemistry in laser-induced plasmas for space exploration and astrobiology

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Abstract:

Laser-induced breakdown spectroscopy is one the areas of analytical spectroscopy receiving a broadest interest. An increased understanding of the underlying phenomena occurring in the plasma and the use of new experimental strategies and improved instrumentation are current opening new fields of application of LIBS such as the analysis of nanoparticles or the use of molecular information in the plasma.

In the present talk, advanced in the use of LIBS for the characterization of single nanoparticles will be presented. The detection power of LIBS will be discussed for multielemental single nanoparticles analyzed in an optical trap. Also, some results on the chemistry in laser-induced plasmas will be presented with focus on the potential use of LIBS molecular fingerprints for space exploration.

Keywords: laser, laser-induced breakdown, spectroscopy